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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/640,735	08/17/2000	Willem Johannes Van Den Bogert	PHNL 000358	4814

7590 08/09/2002  
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EXAMINER

ROY, SIKHA

ART UNIT PAPER NUMBER

2879

DATE MAILED: 08/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/640,735

Applicant(s)

VAN DEN BOGERT ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 August 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The Preliminary Amendment (Paper # 9), filed on August 17 2000, has been entered and is acknowledged by the Examiner.

#### ***Specification***

The disclosure is objected to because of the following informalities:

Page 5 line 29, "stem 11;11' " should be replaced by --stem 21;21'--.

Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim 7 is objected to because of the following informality:

In claim 7, page 11 line 8 "discharge space (13) should be replaced by --discharge space (18)--.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 4,047,071 to Busch et al.

Regarding claim 1 Busch et al. disclose (column 4 lines 5-40 Figs 1 and 2) a low pressure mercury vapor discharge lamp comprising a discharge vessel 1 (light transmitting envelope) with tubular end portions each having longitudinal axis, electrodes 9 arranged in the discharge space for generating and maintaining a discharge and auxiliary amalgam 13 being provided on a carrier 11 (metal cap providing supporting surface for auxiliary amalgam) in the proximity of the electrode 9, the carrier being arranged in a plane transverse to the longitudinal axis. The limitation reciting the vessel containing mercury and inert gas is considered to be inherent to a low pressure mercury vapor discharge lamp.

Referring to claim 3 Busch et al. disclose (column 4 lines 12-16,25,26) a stem 3 in the tubular end portion carries the electrode 9 and the carrier 11 (metal cap) is provided on a supporting body 12 arranged in the stem.

Regarding claim 5 Busch et al. disclose the supporting body is formed by wire 12.

Referring to claim 7 it is evident from the Fig.1 that the carrier 11 is arranged at a side of the electrode 9 facing away from the discharge space.

Regarding claim 8 the carrier 11 Busch et al. disclose (column 4 lines 23,24) is electrically insulated with respect to the electrode 9.

Alternately claims 1,6,7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 3,562,571 to Evans.

Regarding claim 1 Evans discloses (column 3 lines 25-50, 74,75, column 4 lines 1-10 Fig. 1) a mercury-vapor discharge lamp comprising a discharge vessel 12 enclosing a discharge space filled with predetermined amount of mercury and suitable inert fill gas, tubular end portions 24 each having longitudinal axis, electrodes 20 arranged in the discharge space for generating and maintaining discharge and auxiliary amalgam material 30 provided on a carrier 32 (wire mesh holder), the carrier being arranged in a plane transverse to the longitudinal axis.

Referring to claim 6 Evans discloses (Fig. 2 lines 1-3) the carrier 32 is directly press fitted onto the stem 14 which carries the electrode 20.

Regarding claim 7 it is evident from the Fig. 1 that the carrier 32 is arranged at a side of the electrode 20 facing away from the discharge space.

Regarding claim 9 Evans discloses (column 4 lines 7-11) the carrier 32 comprises a further part T (tongue) which is arranged in a plane parallel to the longitudinal axis.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 4,047,071 to Busch et al. in view of U. S. Patent 3,688,148 to Fedorenko et al.

Claim 3 differs from Busch et al. in that Busch et al. do not exemplify the supporting body formed by an exhaust tube which extends at least partially in to the discharge space.

Fedorenko et al. in analogous art of fluorescent lamp with amalgam housing disclose (column 4 lines 4-22, Fig.1) a discharge lamp having auxiliary amalgam 12 supported by the exhaust tube 4 at the end portion extending into the discharge space. It is further noted (column 3 lines 17-25) that this structure of a lamp wherein the exhaust tube is used as a means for housing the amalgam becomes particularly valuable when the manufacturer has no knowledge of future operating conditions of the lamp and it is up to the user to choose the appropriate temperature characteristics of the operation of the lamp.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the supporting body carrying the amalgam of the lamp of Busch et al. by the exhaust tube as taught by Fedorenko et al. for fixing the position of the amalgam independent of the operating conditions of the lamp and hence easier manufacturing.

Regarding claim 4 Federenko et al. disclose (Fig.2 column 3 lines 50-54)the carrier containing the amalgam press-fitted onto the end portion of the exhaust tube which is situated in the discharge space.

Claims 6, 9, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 4,047,073 to Busch et al. in view of U. S. Patent 3,562,571 to Evans.

Claim 6 differs from Busch et al. in that Busch et al. do not exemplify the carrier of the amalgam directly press-fitted onto the stem which carries the electrode in the tubular end portion.

Evans in related art of mercury vapor discharge lamp discloses (Column 4 lines 1-10, Fig.2) the carrier 32 comprising a rectangular panel of wire mesh carrying the amalgam 30 directly press-fitted onto the stem 14 which carries the electrode in the tubular end portion. Evans further discloses that this placement of the amalgam directly on the stem-press at a predetermined distance from the cathode reduces the temperature of the amalgam and thus avoids its vaporization and bulb-darkening problem.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to modify the carrier of the lamp of Busch et al. directly press-fitted onto the stem as taught by Evans for placing the amalgam at a predetermined axial distance from the electrode which reduces the temperature of the amalgam and thus avoids its vaporization and bulb-darkening problem.

Regarding claim 9 Busch et al. do not disclose the carrier comprising a further part which is arranged in a plane parallel to the longitudinal axis.

Evans discloses the carrier having a part (upstanding tongue T, Fig.2)transverse to the plane of the carrier and hence parallel to the longitudinal axis which provides snug fitting of the carrier with the stem portion.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a part parallel to the longitudinal axis as suggested by Evans to the carrier of the amalgam of the discharge lamp of Busch et al. for snug fitting of the carrier with the stem portion.

Regarding claims 10 and 11, Evans discloses the distance  $d$  ( $x$  in Fig. 1, column 2 lines 55-60) between the auxiliary quantity of amalgam and the electrode is such that the amalgam heats up and releases mercury vapor quickly but operates at a temperature which prevents the amalgam-forming-metal from vaporizing and depositing on the envelope walls. Busch et al. in view of Evans disclose the claimed invention except for the limitation of the distance  $d$  lying in the range from  $0.5 < d < 8$  mm. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the range of the distance between the carrier and the electrode from  $0.5 < d < 8$  mm, since optimization of workable ranges is considered within the skill of the art.

Claim 11 recites the same limitation as of claim 10 and hence is rejected for the same reason.



**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art references are cited to further show the state of the art with respect to low pressure mercury vapor discharge lamp containing amalgam.

U. S. Patent 3,629,641 to Hofmann et al.

U. S. Patent 3,858,075 to Herrmann et al.

U. S. Patent 4,182,971 to Cassidy et al.

U. S. Patent 4,542,319 to Grenfell et al.

U. S. Patent 5,394,056 to Forman et al.

**Contact Information**

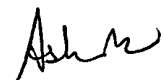
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy  
Patent Examiner  
Art Unit 2879

  
ASHOK PATEL  
PRIMARY EXAMINER